

P-5 STACKS CN

Coins and Computers

NEWSLETTER

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INTERNATIONAL NUMISMATIC COMMISSION

Commission Internationale de Numismatique – Internationale Numismatische Kommission

■ MONEY OF THE INCIPIENT BYZANTINE EMPIRE

The new edition of Moneta Imperii Byzantini I (MIB I) now in English and called Money of the Incipient Byzantine Empire (MIBE) was finished in 2000¹.

While we were striving to adapt to the computer age, we decided to produce a CD-ROM which would assist the user without actually replacing the book itself, the price of which was set at a very low level to eliminate economic barriers. The user would receive all basic attribution facts necessary for a correct citation.

Although the author of these lines had some computer but little programming experience, making the CD himself was the only way for him to realize it, since professionals asked small fortunes to do the job. This is also the reason why the program is only available for Windows 95 to 2000.

As there was no sample we could base our plans on, it was necessary to find a simple but still efficient way to allow the user to identify coins of the period. The most intuitive way was thought to be letting the user select the metal and the denomination, e.g. in copper by selecting the large value marks on the reverse of the coins (e.g. a large M for 40 nummi) and then assemble the picture of the coin on the screen, i.e. combine busts/legends and symbols in a graphic way on the selected "dummy" reverse and therefore totally hide the usually less intuitive database mask. The easiest way to program this (as well as the one that appeared to be the least difficult one to gain access to without training) was determined to be Microsoft's Visual Basic 5 utilizing the known Microsoft Access Jet database engine.

To avoid clogging up the hard disk, it was decided to leave the pictures on the CD and only let the program install itself on the hard disk only using c. 2.5 MB of storage capacity.

To prevent any features that would disturb the appearance it was found best to staple the available symbols behind the "master" reverse and only cut out a field that allows one to click through the symbols without the need for a drop down list. This method always lets the user see

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a complete reverse, in the best case resembling the reverse of the coin he holds in his hands. As the obverse busts vary from mint to mint in their drawing it was decided to remove the busts totally to avoid users getting irritated by the fact that the drawing of the bust in their hands is different. (This “ghost-feature” made a user of the program think it didn’t work and pull the plug before more damage was done).

Once the user has combined obverse and reverse it is necessary to press the “IDENTIFY” button. This sends a database query produced by the combination of the pictures selected by the user and presents the attribution on the screen (emperor, mint, denomination, period of production and MIBE number) if this combination exists.

As style differentiation is the only way to correctly identify gold coins, as well as some silver and bronze coins, a level to check the style of the busts had to be implemented if the selected obverse/reverse combination makes it necessary. If this is the case a new screen appears after pressing the “Identify” button. This shows all main style groups that can be found with the given obverse/reverse combination and to avoid the user clicking on interesting-sounding mint-names no description is given, only obverse pictures. Once he clicks the picture that resembles the style of his coin the attribution details appear, and he can view the originals by clicking on “ARCHIVE”. In the archive, pictures will appear about 1:1 on resolutions of 800x600 and larger on 17” screens. Clicking on them produces an enlarged version.

As an additional benefit there is a regnal year converter for Justinian I as well as a comparison section, in which the user can display types in four windows and compare e.g. the style of

different mints and explore the c. 1000 pictures on the CD.

An update is available on www.univie.ac.at/numismatik/mibe.zip. Depending on the Excel-version this update might be necessary or not, but even if it is not necessary it is recommended, as it makes the use of the program slightly easier for the user with little computer experience.

¹W. Hahn & M. A. Metlich: Money of the Incipient Byzantine Empire, Anastasius I - Justinian I, 491-565 = Veröffentlichungen des Instituts für Numismatik und Geldgeschichte 6, Vienna 2000. ISBN 3-9500530-3-4. 171 pages, 35 plates, 5 synoptic tables. EUR 50,-.

M. A. Metlich: Money of the Incipient Byzantine Empire: Anastasius I to Justinianus I, Coin Identification Program = Veröffentlichungen des Instituts für Numismatik und Geldgeschichte 6 a, Vienna 1999. ISBN 3-9500530-5-0. CD-ROM (for Win 9x, NT 4+, 2000). EUR 15,-.

Michael Metlich

■ WWW.BNF.FR. NOUVELLE VERSION

Un accès simplifié aux catalogues, Gallica, la bibliothèque numérique, et Chroniques web autant d'éléments enrichissant le site web de la BnF.

Ouvert en 1995 avec une exposition d'enluminures numérisées, puis une visite virtuelle du site François Mitterrand, www.bnf.fr s'est enrichi d'informations et de services pour le grand public et les professionnels : activités de l'établissement, actualités culturelles – expositions virtuelles, *Chroniques web* –, *Gallica*, la bibliothèque numérique, accès aux catalogues de la bibliothèque, réservation de places à distance, dossiers pédagogiques.

Avec un public de plus en plus nombreux – 8 800 visites par jour –, le site web s'impose comme le plus fréquenté de la Bibliothèque. Depuis fin mars, une nouvelle page d'accueil simplifiée permet un accès plus facile aux informations et services. Plusieurs rubriques du site s'enrichissent de nouveautés importantes.

Accès simplifié et élargi aux catalogues

100 000 nouvelles notices complètent en avril 2001 le catalogue *BN-Opale plus* qui permet la localisation de plus de sept millions de livres et périodiques patrimoniaux de la BnF des origines à nos jours. Depuis mars 2001, le catalogue *BN-Opaline* des collections spécialisées – Arts du spectacle, Cartes et plans, Estampes et photographies, Manuscrits, Monnaies, médailles et antiques, Musique – est consultable directement sur écran.

Réservation de documents sur Internet

En septembre 2001, un lecteur titulaire d'une carte "Rez-de-jardin" pourra réserver des documents à l'avance en se connectant sur Internet. Il pourra également garder des références bibliographiques en constituant un classeur de notices qu'il peut envoyer en format HTML sur sa messagerie personnelle ou utiliser pour une réservation de documents.

Chroniques Web

Le lecteur de *Chroniques* de la BnF souhaitant conserver un article ou approfondir une

information peut naviguer dans cette nouvelle rubrique du site www.bnf.fr. Elle s'enrichit chaque semaine de nouveaux événements culturels de la BnF. On y retrouve, façon web, le rubricage du magazine.

Expositions virtuelles

Composée des grandes expositions de la BnF, cette rubrique reprend les audiovisuels projetés sur les bornes qui ponctuent les expositions: dossier d'écrivains (*Brouillons d'écrivains*), légendes (*Contes de fées...*). Par cette rubrique, il est possible de visiter les expositions, de les préparer mais aussi d'y revenir à distance.

"Voyages en France" : une nouvelle rubrique de Gallica

Avec 60 000 images fixes, 50 000 volumes numérisés en mode image et 1 250 ouvrages numérisés en mode texte, *Gallica* est l'une des plus importantes bibliothèques numériques accessibles gratuitement sur le réseau mondial. Sont venus s'adjoindre 3 000 textes, 6 000 images et 130 documents sonores, sous l'intitulé *Voyages en France*. Ils retracent une cartographie originale de la France du XVI^e siècle à nos jours. Cet ensemble est composé de textes d'écrivains français et étrangers, de guides, de cartes, de manuscrits, de nombreuses images ainsi que de divers documents sonores.

Il décline toutes les formes de voyage : les politiques, par exemple les "entrées royales" et les visites de souverains étrangers; les scientifiques, les littéraires ou encore les voyages d'apprentissage tel le Tour de France des Compagnons.

Un site associé : www.ccf.fr.bnf.fr

Un clic sur la page d'accueil du site www.bnf.fr active un lien vers le *Catalogue collectif de France*, dont la maîtrise d'ouvrage a été confiée à la BnF. Cet outil unique donne accès à un répertoire de ressources documentaires, qui contient la description détaillée de plus de 3 900 bibliothèques françaises et de leurs fonds spécifiques.

Depuis fin janvier 2001, grâce au rapprochement de trois grands catalogues – *BN-Opale Plus*, le catalogue du Système universitaire de documentation, le catalogue des fonds anciens de 55 bibliothèques municipales ou spécialisées –, le *Catalogue collectif de France* ouvre l'accès à plus de quatorze millions de notices d'ouvrages et de périodiques des principales bibliothèques françaises.

Les documents ainsi localisés sont consultables dans leurs bibliothèques, selon les règles propres à chaque établissement. Courant 2001, un lecteur pourra en demander la reproduction, la réservation sur place ou le prêt par l'intermédiaire d'une bibliothèque de rattachement.

Marie-Noële Darmois
Croniques de la Bibliothèque nationale de France No 15, 2001

■ DIGITAL IMAGES — SOME PRACTICAL COMMENTS

At the Stockholm Numismatic Institute we have been working with digital images for a number of years. However, it is only in recent years that increased resolution as well as new software facilities have made it possible to achieve digital images which have added a new dimension when using digital images in research. Cameras with a price of about \$1,000 can now record images with a resolution of up to 5 Megapixels (5000000 pixels).

Olympus C-2500L

Two years ago we bought an Olympus C-2500L camera with 2.5 Megapixels (1712x1368 pixels). After a long period of experimenting with different ways of setting up camera and light, a solution was found which produces very good images. Using the macro function (used for photographing small objects) and the spot focus the camera is placed on a stand with the lens c. 20 mm from the coin (we usually photograph coins with a diameter of c. 20 mm). The coin is placed on a small glass board placed on four rubbers (leaving the front open) with a white paper as background. This arrangement causes the shadow to fall outside the image. The light source is a very big spot light (diameter of the glass is 155 mm) with the possibility to focus the light and a standard 100 W light bulb. The light is set at a very small angle (this is needed because of the small distance between the coin and the lens) which provides extreme relief light. A ruler is placed near the coin (on the other side of the light) so that the size can be determined when the image is saved. The coin should be placed in the centre of the image in order to avoid distortion. The image is saved in JPG-format and will, depending on the coin, be about 500 KB. With a 20 mm coin the image will cover about 60% of the height and 48% of the width and the empty spaces on all sides of the coin can then be cropped off (be sure to include a strip of the ruler). The actual number of pixels on the image after cropping, will thus be reduced to about 856x820 (50% of 1712 and 60% of 1368). This process has then reduced the resolution significantly. About 95% (a little space has to be left above and below the image) had been the optimal size since the larger share of the image covered by the coin the higher the resolution will be (this can be obtained with a larger coin). However, the good side is that the size of the image is now reduced to 150-250 KB. Most computers today are provided with some type of programme which allows you to study digital images on your screen (such a programme is also included with the camera). On the screen a 20 mm coin can be viewed at about 13 times actual size without any loss of resolution. Even when magnified 25 times small details are quite clear. It is not until you magnify the images to about 50 times actual size that you can see the individual pixels on the screen (using this size the image is so large that a single letter on the coin will cover the entire screen).

The light proved to be crucial for success. The spot light used now is very bulky (275x240x200 mm) but no other light source has provided the same image quality. In a museum the size of the spot light is no problem, but if the camera will be used on travels it will be an obstacle. If only artificial light is used silver coins tend to get a brownish colouring, but if the camera is placed by a window the day light will often be enough to get the colours right. If there is not enough light (for example when part of the surface of the coin is shaded) that part will become blue.

The Olympus camera is easy to handle and focusing is very rapid (fraction of a second) and images take only two seconds to be stored on the memory card. The memory card provided

with the camera (8 MB) was far too small and only have space for about 15 images. We now use one 32 MB memory card and one 128 MB memory card which allow about 55 and 220 images respectively to be stored. The camera has two slots for memory cards, one each of SM (Smart Media) and CF (Compact Flash). Using the cable provided with the camera it takes about one minute per image to download to a computer. If the card is connected to a card reader with a USB port the contents of a 64 MB card can be downloaded in less than a minute.

The disadvantage with the Olympus camera is the need to photograph at a very small distance from the coin in order to save the images with as high a resolution as possible. This makes it tricky to move the coin into position under the lens and it also means that the depth of focus is very small. If the coin is bent or the relief is high only a part of the motif on the coin will be in focus. Thus the camera is for example not suitable for taking images of small coins with a very high relief (e.g. some Ancient Greek coins) or a high relief. For larger coins the distance to the lens will be longer and thus the depth of focus will be somewhat better.

The camera comes with a programme which can handle the images and have functions to edit the images like making the images darker or brighter etc. However, the programme is slow for instance when edited images need to be saved again or when a large set of images in a directory are read onto the screen. Due to these problems and the lack of a number of features it is recommended to buy a special programme for handling images. They range from very inexpensive ACDSee to very expensive like Photoshop. Although the features include contrast and sharpness it is in fact seldom possible to improve on the original image with the exception of the darker/brighter function which works very well.

With the Olympus programme you can print the images on a laser printer. The options available allow you to print one (in two different sizes), 3, 4, 6, 12 or 24 images on a standard A4 paper. The last option is very useful for documentation purposes while the others are useful for example die studies. In order to achieve high quality prints you will need a laser printer with a resolution of 1,200 dpi (dots per inch) which is equal to 47 dots per millimetre. Using ACDSee you can adjust the size and number of images to be printed on a single A4 paper in any way you like.

If the images should be used for publication the resolution is highly sufficient. On the contrary most printers will not be able to print the high resolution at which the images are recorded. One problem however, is that of the size. The images are saved with a standard "internal size", i.e. the size will be the same independent of the size of the coin. The size can be changed afterwards so that the image, when used in a word processing or layout programme retains its actual size without the need to be manually reduced (which can cause distortion). This is when the ruler is necessary in order to achieve an accurate measurement. With the help of the ruler the height of the image can be determined and the corresponding figures can be entered before the image is saved using the correct size (the width will be adjusted at the same time based on a calculation made by the image programme used for the operation). However, it would have been much easier just to point at two places on the ruler on the image and then enter the distance and the programme would automatically calibrate that measurement and set the correct size of the entire image. So far I have not seen any image programme which can handle this problem. Now it takes a lot more time to adjust the size of each image (since the images are cropped differently no standard height can be given). Before publication you also need to remove the strip of the ruler from the image. In most programmes features are available which allow you to do this.

It is important to align the coin as accurately as possible for two reasons. The first is that although it is possible to rotate the image afterwards the options are steps of 90 degrees each or otherwise you risk getting a moiré effect (interference pattern when two different sets of dots are placed on top of each other) when the image is screened. Secondly, if the image is turned 180 degrees the eye will see raised parts on the surface of the coin as being lowered.

Minolta Dimage 7

We have recently bought another digital camera, Minolta Dimage 7. It has 5.24 Megapixels and has a 35-200 mm zoom. Using the zoom at 200 mm, the 2 times magnifying function and the macro it is possible to fill the entire image with a coin of c. 20 mm placed at a distance of c. 150 mm. This provides two advantages which the Olympus does not have. It is easier to set the light and avoid shadows. A coin which has been cleaned results in a dark or grey image with the Olympus because the surface does not reflect much of the light since it can only come from the side. With the Minolta it is possible to have more light coming from above and thus the images will look better. Since the lens is further away on the Minolta the entire coin will remain in focus even if it has a high relief. The Minolta on the other hand uses a wider field when focusing and focusing thus takes much longer time. The time needed to store an image on the memory card (CF) is much longer (even taken into account that the size of the image will be higher).

File names

Depending on what the images will be used for, the name you give to each image can result in problems. When you get a lot of images you need to keep track of them. If the sole purpose is documentation, then a simple number may be the best solution. If you photograph coins from many different sources and also use them for research purposes it gets more problematic because then you need to sort the images according to different criteria. On the other hand the images can only be sorted in ascending or descending order based on the name. Thus it will not be possible to sort them according to provenance (e.g. find spot) on one occasion and according to type on another occasion. Thus, the name we give to each image is based on abbreviations for land, ruler, type and date (the latter two using a reference no. to a standard catalogue) and provenance at the end (obverses and reverses are distinguished by the letter "a" and "b" respectively at the end). All images are stored in directories based on provenance (museum or find spot). This allows you to sort images by types based on provenance. When for example a die study is undertaken the appropriate images are copied to a new directory where all the images can be sorted according to type independent of their provenance. This may seem to be a complicated way but it makes it possible to rapidly find the images you look for and then collect them in a single directory. It is also a fact that when you store more than a few hundred images in the same directory it gets very difficult to handle them. It is of course possible to link the images to a database which can be sorted or selected in any desired way. However, if you need to compare images of coins of the same type it is not possible any more.

Programmes and formats

If a database programme existed which could use filenames as a database it would be possible to store all images in the same directory. Whenever a number of images of a given type etc.

were needed the database would select and sort copies of the images into a new directory.

One disappointing aspect with images is that the function "properties" (found when right-clicking on an image) is not compatible between different programmes. This was apparent when information had been entered using the properties function in the Olympus programme. When the same image was used in ACDSee the properties file was empty, i.e. ACDSee could not show the properties recorded by the Olympus programme.

There are basically two image formats used today: JPEG and TIFF. JPEG has the advantage of high compression meaning that the images require less memory. The disadvantage is that the compression also means that if you make changes in the image it will not retain all the information in the original image. The advantage and disadvantage with the TIFF format is opposite to that of JPEG. It is basically up to you to decide what is the more important. It is recommended that you test both before making a decision. A TIFF image could require anything from 3-10 times as much memory. This is important since TIFF images means that the memory cards will be able to store much fewer images. Although the prices of memory cards have decreased significantly in recent years, they still cost a lot. A 256 MB card will cost about \$100. The higher resolution provided in the latest generation of cameras also means that they require more memory. The amount of memory needed to store an image also depends on how dark the image is. If the coin is very dark, the image may also become dark and then it could typically demand 500 KB and after adjusting brightness it could be half as much.

As shown by the examples given above there are many things to be aware of when you decide to buy a digital camera. Whatever camera you buy there will probably be some advantages and some disadvantages, but as of yet no camera has a good solution to all the requirements needed for a truly successful result. Because of the limited experience in handling the Minolta camera a more exhaustive review of it is not possible at this stage.

If you send me an e-mail (kenneth.jonsson@ark.su.se) I will send you four sample images using the Olympus camera (about 1MB in all).

Kenneth Jonsson

NEW OR CHANGED ADDRESSES



Home pages

BELGIUM

Moneta - www.cultura-net.com/moneta

DENMARK

Den kgl. Mønt- og Medaillesamling/Royal Collection of Coins and Medals - www.natmus.dk/moentsamling

FINLAND

Soumen Numismaattinen Yhdistys/Numismatiska Föreningen i Finland/Finish Numismatic Society - www.snumis.fi/

GERMANY

Universität Trier, Geschichtliche Landeskunde - www.uni-trier.de/uni/fb3/geschichte/haefele/

ITALY

Museo Archeologico di Bologna - www.comune.bologna.it/bologna/Musei/Archeologico/emedag/index.htm

Università degli Studi di Roma Tor Vergata - www.uniroma2.it/eventi/monete

JAPAN

Currency Museum, Bank of Japan - www.imes.boj.or.jp/cm/

NETHERLANDS

Het Nederlands Muntmuseum, Utrecht - www.muntmuseum.nl

SWEDEN

Myntverket/The Mint - www.myntverket.se/

SWITZERLAND

Cabinet des Médailles du Canton de Vaud, Lausanne - www.lausanne.ch/cabinet_medailles

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The editors welcome contributions to the next issue of CCN!

■ EDITORIAL SECTION

CCN (the acronym for the newsletter) is a newsletter which aims to provide information to all interested in numismatics who are also working with computers. The name of the newsletter has been chosen for convenience only and encompasses all branches of numismatics: coins, banknotes, medals, tokens etc. from ancient Greece to modern times. Current circulation is c. 300. CCN is supplied free of charge and distributed to all INC/CIN members and others interested.

We try to offer a wide selection of subjects, but also regular topics which include: past and future conferences, reports from museums/institutions on their work, current projects, debate, publications etc. CCN depends upon reader contributions to fulfil its purpose.

We urge readers who have information, comments or questions to contribute which might be of interest to others to send it to us. Reports on computer activities at museums, institutions etc. are also welcome. Reviews of literature where computers have been adopted are also appreciated.

Contributions to CCN should preferably be delivered to one of the editors as ASCII, Wordperfect or Pagemaker files via e-mail or on disk. The present editors regret that they can only use disks operating under the DOS system. However, contributions can also be delivered typed on paper. Contributions are accepted in English, French, and German. Proofs are not sent to the contributors. Deadline for contributions are 15 May and 15 November. Illustrations are preferably limited to line drawings because we use a simple copying machine to "print" CCN.

E-MAIL / HOME PAGE

Please fill out this form and return or mail it to the CCN editor in Stockholm, Kenneth Jonsson, for address see front page. New e-mail addresses and home page addresses will be published continuously.

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☐ I want to receive the questionnaire about computers/databases



CONFERENCE FORM TO BE SENT TO THE EDITORS

I / We plan to arrange a conference on numismatics and data

Contact person:

Museum/institution:

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Fax:

Subject(s):

Number of participants:

Location:

Date:

Costs:

Open to all interested?

Yes ☐

No ☐